

# Navigating distributed terminologies using LOD

*The case of OE-OA & AGROVOC in Organic.Edunet*

## LOV Symposium

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# Contents

- Introduction
- Exposing Organic.Edunet KOS as LOD
- Mapping OE ontology to AGROVOC
- From centralized to distributed terminologies navigation in Organic.Edunet
- Conclusions



# Organic Edunet

<http://www.organicedunet.org>



Organic.Edunet

Learning material on organic agriculture in Europe



- Home
- Search
- Network
- Educational Scenarios
- For schools
- Quality Assurance
- Repository Tool
- About

Search language

All

Set

LOGIN

Username

Password

Remember Me



Log in

- Forgot your password?
- Forgot your username?
- Create an account



Stats

Registered Users : 1944  
Educational Resources : 10967  
Connected repositories : 11



How to find resources?

How to contribute resources?

Collections and communities



Featured resource



Title: Make a Container Garden

Description: Grow a garden in a closed jar or container. This activity includes all the required materials and steps in order to successfully create a tiny garden in a container.

Keywords: container garden, garden, planting, seedlings

Resource type: open activity



Add review | Add tag | Add rating

Most recent

Most popular

Most viewed

GoodPlanet



GoodPlanet is an environmental non-profit organization that was created in 2005 to raise public awareness of environmental protection and to bring concrete solutions to the Earth's ecological

Browse



Find by subject



Text based search

search...

Resource type

Educational level

Search

Concept cloud

product policy entity  
animal origin product  
process activity processing  
issue production issue  
natural person  
regulation  
environmental  
impact soil degradation food activity  
pest control  
consumer health issue  
crop residue fodder management  
plant origin

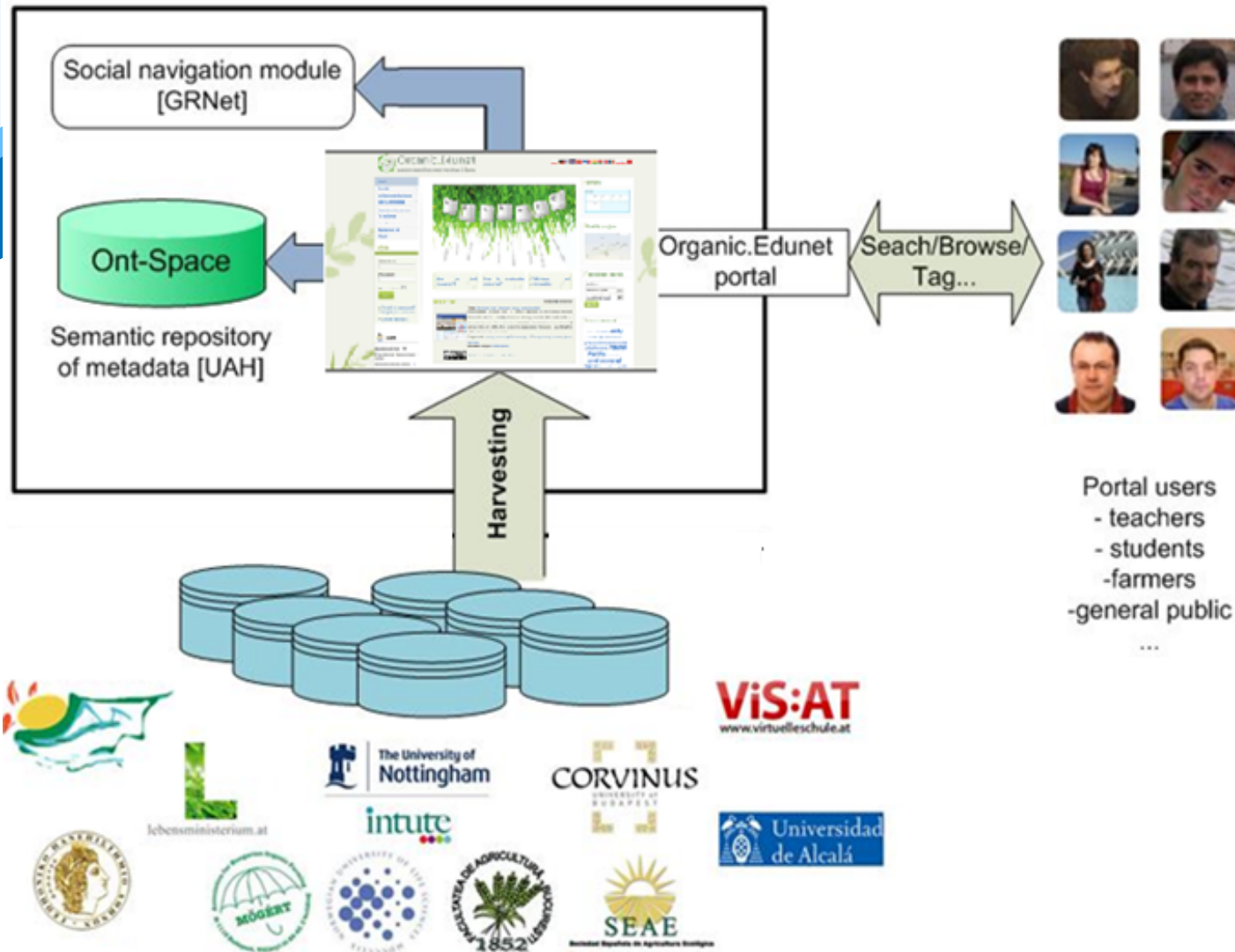


# About Organic.Edunet

Organic.Edunet is a **learning portal** that provides access to **digital learning resources on Organic Agriculture and Agroecology** and aims to facilitate access, usage and exploitation of such content

- Developed in the context of eContent+ program
- **10,767** resources, from 11 institutional collections and 2 user communities
- 1,944 registered users (today)
- +100 unique visitors/day from more than 120 countries
- Many different approaches to find resources.

# General OE workflow



- Ontology-driven intelligent search mechanisms
- Front-end of a repository federation of learning resources in digital format
- LOM compliant metadata
- OAI/PMH harvesting mechanism

# Agricultural metadata record in OE



Go Back

Directrices del manejo de plagas, UC: tomates, áncoras



LO title



Publicado en la Web por la Universidad de California, este recurso aporta información sobre la áncora de la alfalfa (*Autographa californica*), y la áncora del repollo (*Trichoplusia ni*), que causan daños menores a los cultivos de tomate, alimentándose en el follaje de las plantas. Los autores del material son especialistas y consultores agrarios, autorizados por la facultad de la Universidad de California, y posteriormente revisada. El sitio incluye una descripción de las áncoras, información sobre el daño que pueden causar, y directrices en el manejo de las plagas. También se proporcionan fotografías en color de las áncoras.

Description



Access to the resource



View metadata details

Full details  
&

Resource access

Resource type: [guide\\_\(advice\\_sheets\)](#)

Typical age range context: 18-U

Keywords: [plagas de insectos](#), [gestión de plagas](#), [tomates](#), [California](#), [Trichoplusia ni](#), [Autographa californica](#)

Language:



OE annotations

Keywords

Validated by:



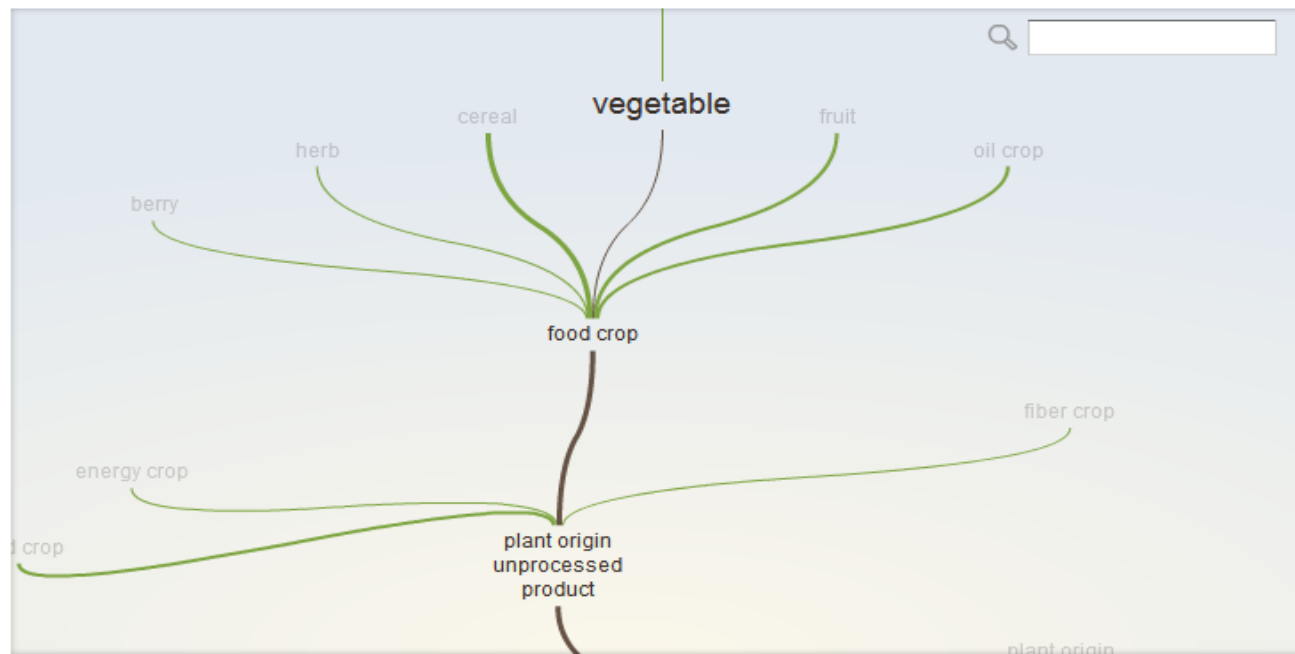
Report problem with resource

Source

☆☆☆☆☆ 0 votes [View rating history](#) [View reviewing history](#)

Tags: [ADD TAG](#)

# Semantic Search in OE portal



Advanced options

72 resources are related to the term **vegetable**

Reset

[Artichoke production in California](#)

A six page document on globe artichoke production, *Cynara scolymus*, in California by Richard Smith et al, farm advisors for the University of California, updated in 2008. It gives details of production areas and seasons, climatic requirements, varieties and planting techniques, soils, irrigation, f...

Date: Monday, 24 August 2009

Classification: pest control, vegetable

[Bean](#)

Bean in an arable land experiment

Date: Friday, 02 April 2010

Classification: horticulture, vegetable

User interface: 16 languages

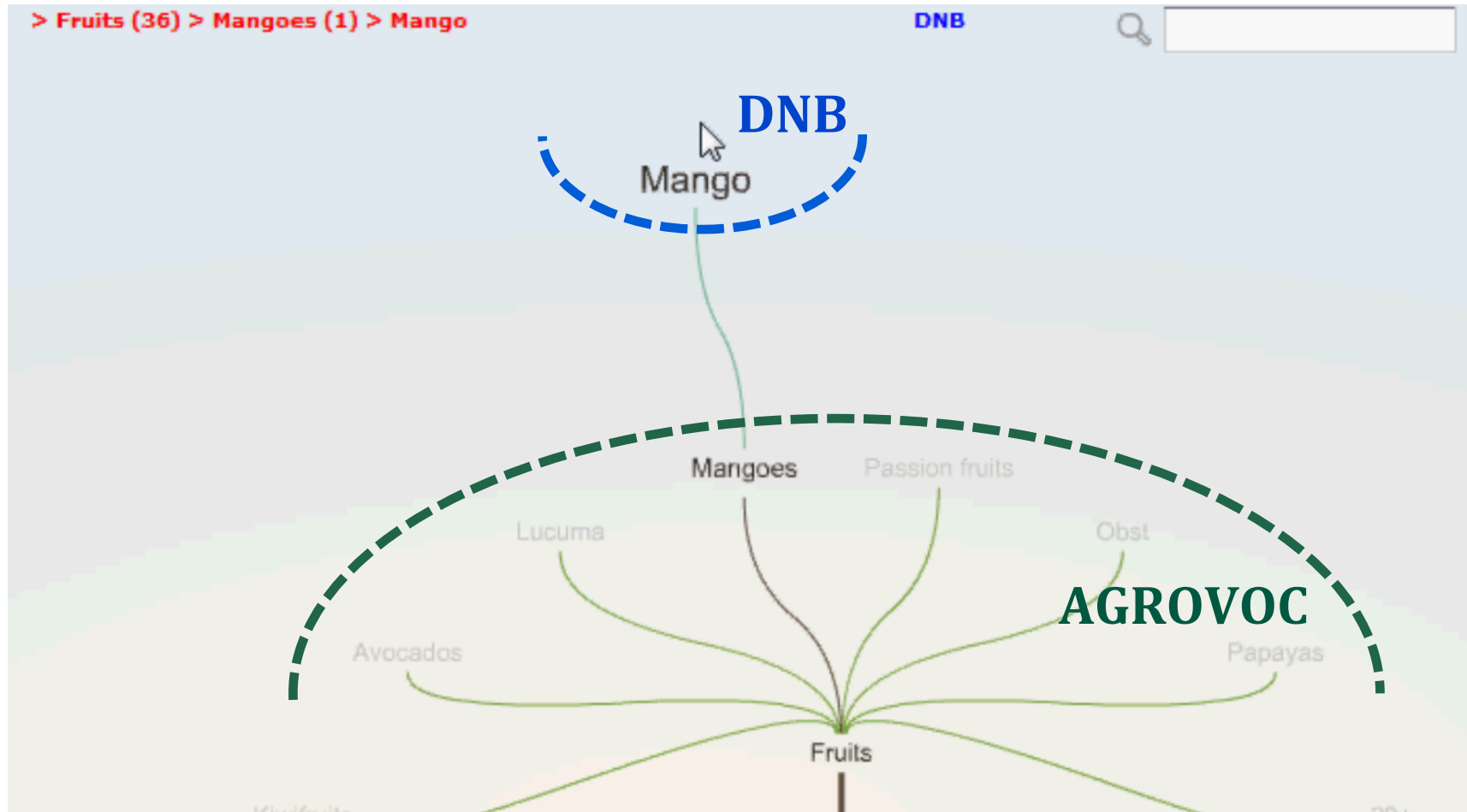
Contents in 8 languages

Ontology: almost 20 languages

1000 resources  
metadata in 9 languages

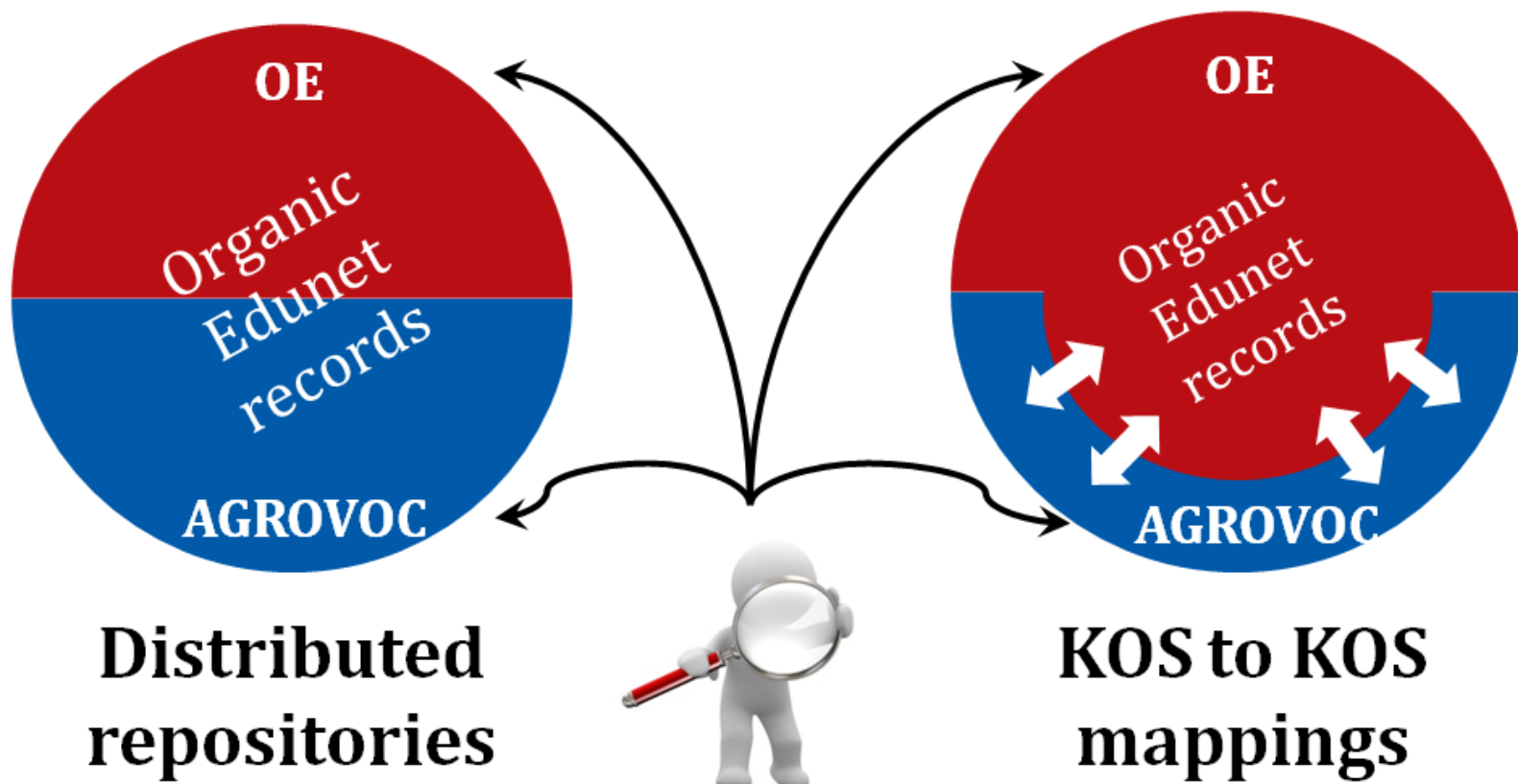
**PREVIOUS  
SEARCH SCOPE  
WAS LIMITED TO  
OE ONTOLOGY**

# Improving *berrypicking* search by mapping agricultural terminologies





# Approaches for KOS mediated Search and Browse

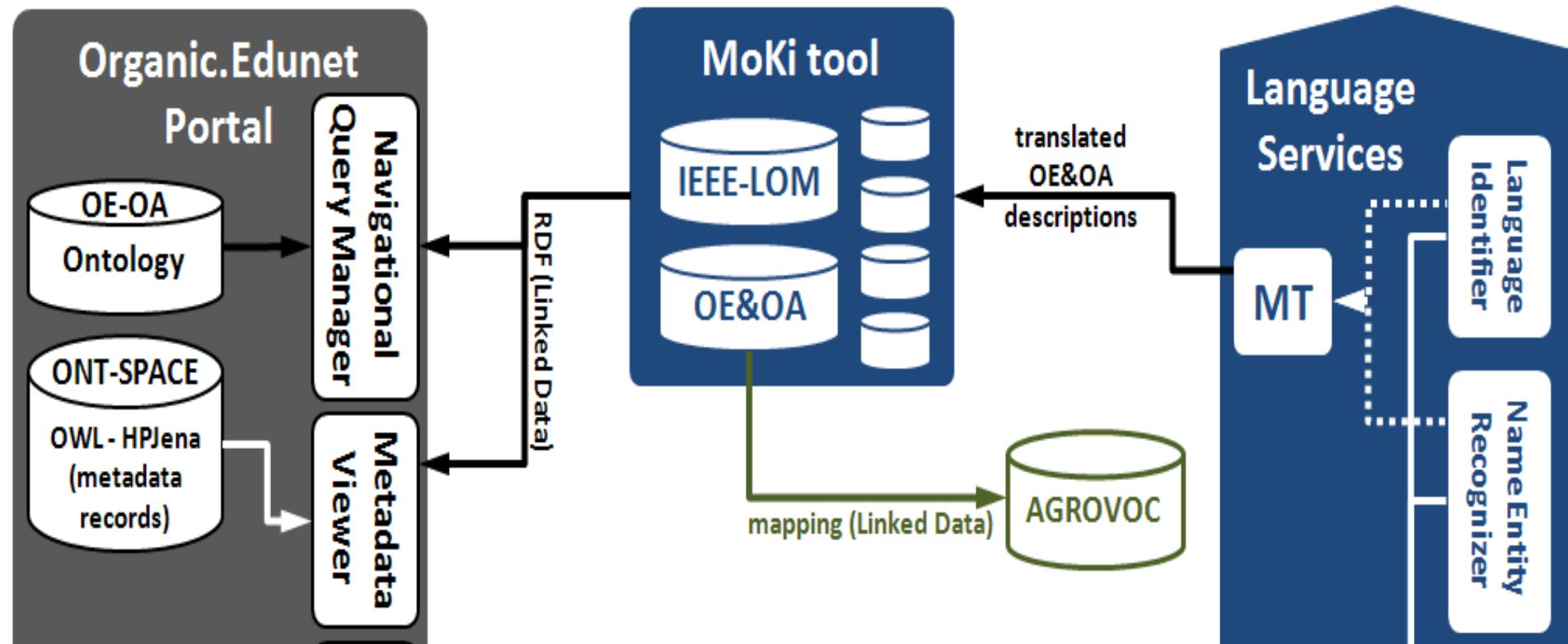


Deciding which approach is better fitting a particular collection involves the study of their **degree of overlapping and coverage** and the extent to which the combination is adding real value to the solution.

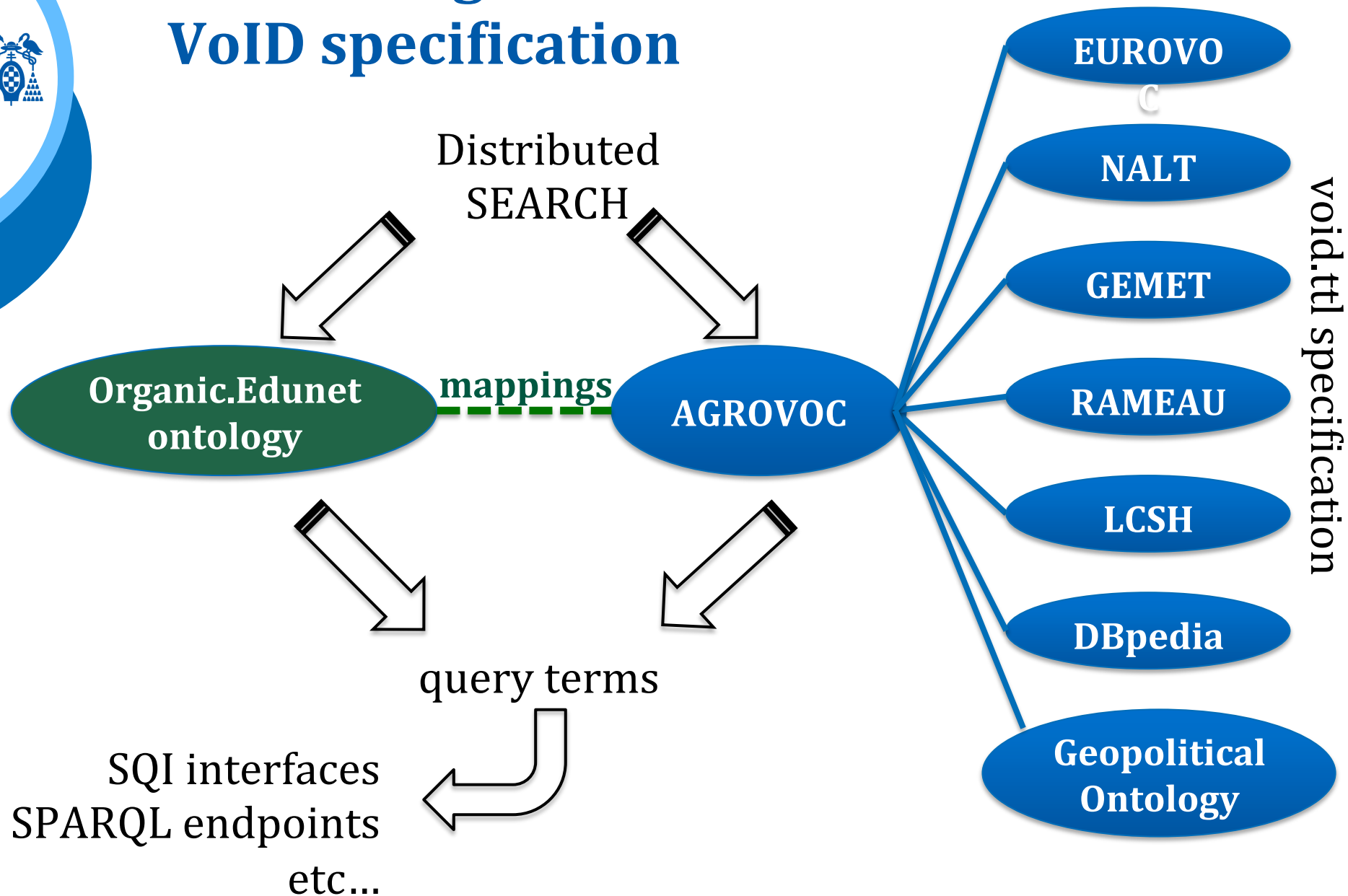


# OE redesign to adopt LOD approach

```
<http://.../ont/biological-fertilizer>  
  oe:is-made-from  
<http://.../ont/plant-origin-processed-product>;
```

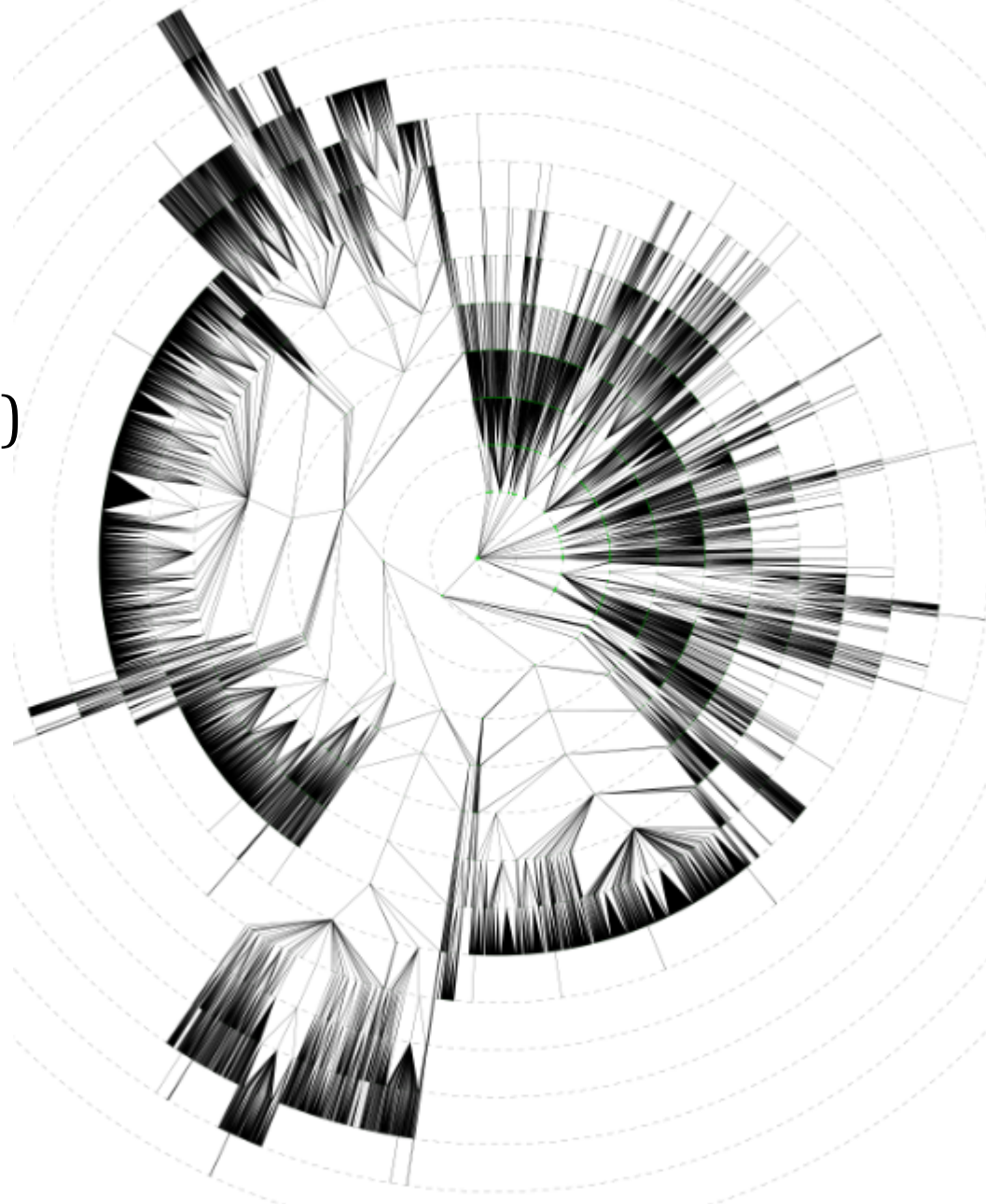


# Connecting linksets with VoID specification



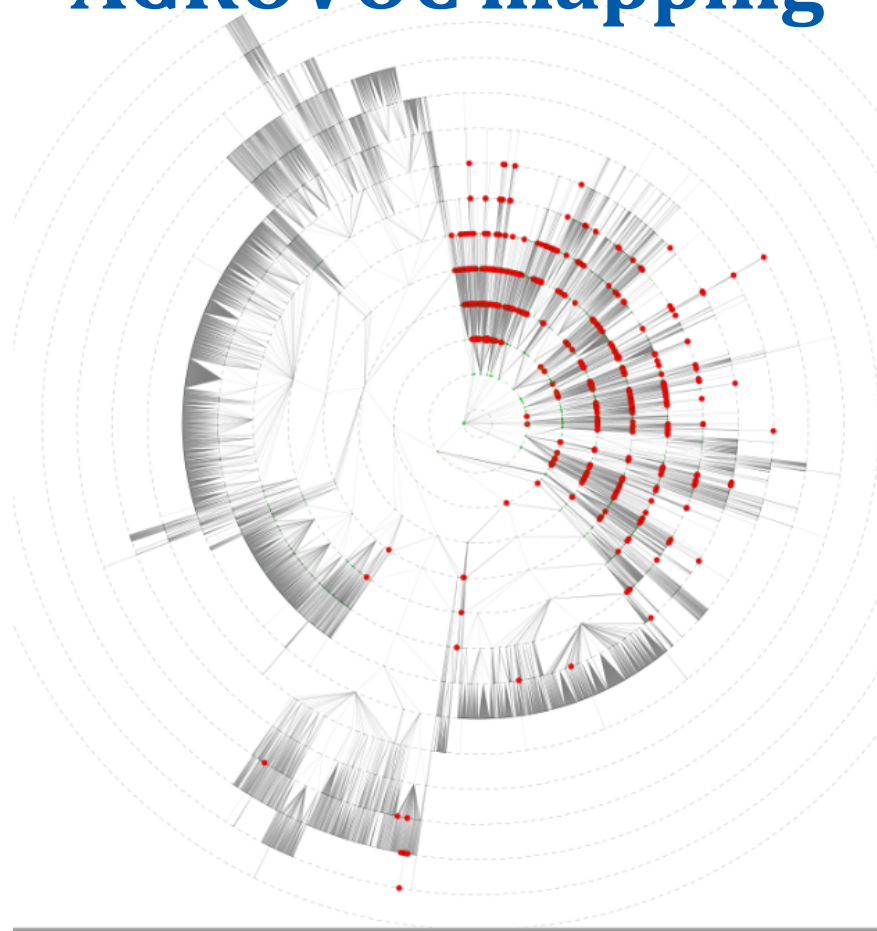
# Radial Tree layout of AGROVOC

- Terms: **40950**
- Relations: **154300**  
(only broader and narrower are shown)
- Hierarchy levels: **13**  
(the longest branch)
- Levels 8 & 9: **13000 terms**



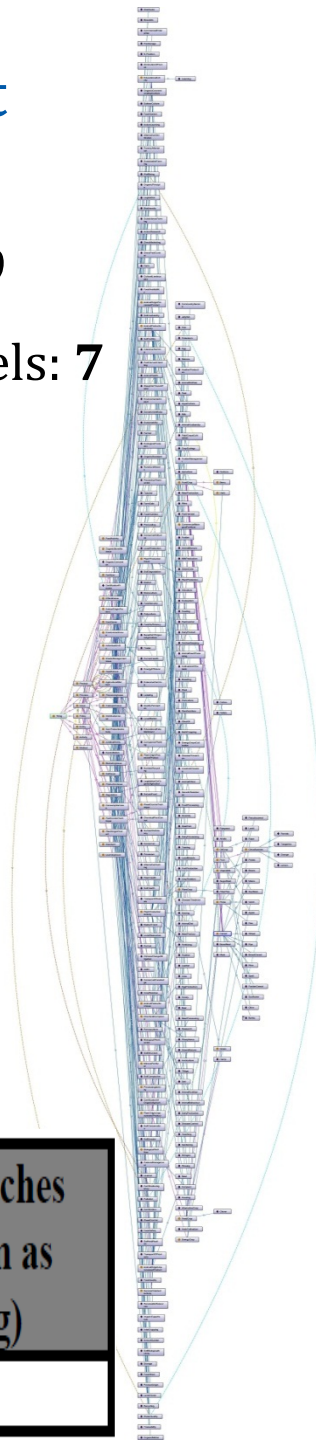


# OE ontology to AGROVOC mapping



## Tree layout of OE-OA

- Concepts: **289**
- Hierarchy levels: **7**



AGROVOC  
terms

OE ontology  
terms

Exact matches

Partial matches  
(AGROVOC term as  
substring)

Partial matches  
(OEO term as  
substring)

40,905

289

98 (34%)

262

1,303

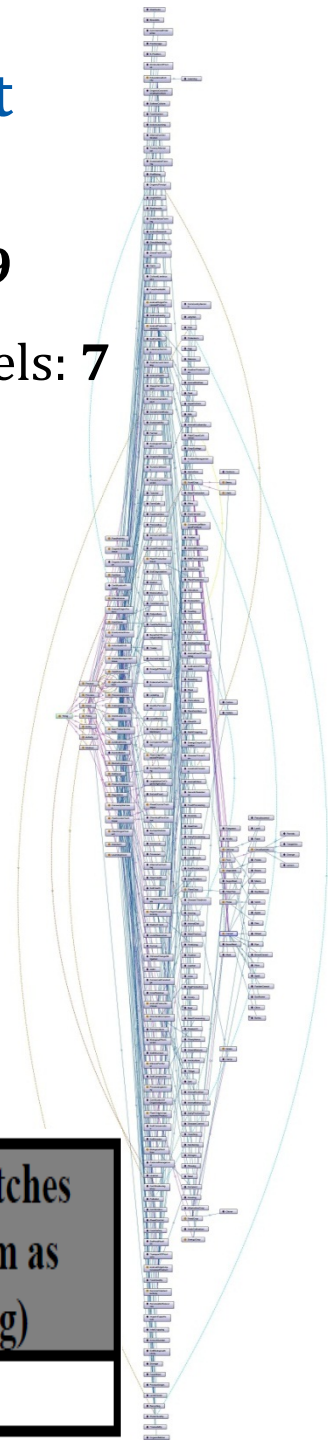


# OE ontology to AGROVOC mapping

- It is difficult to determine the frontiers between terms that are specific to organic agriculture and those that are not.
- The OE ontology contains terms that are not exclusive to organic agriculture and agroecology.
- Mappings occur at different levels of the AGROVOC hierarchy. They are not associated to a particular sub-tree.
- High degree of overlapping in general terms.

## Tree layout of OE-OA

- Concepts: **289**
- Hierarchy levels: **7**



AGROVOC terms	OE ontology terms	Exact matches	Partial matches (AGROVOC term as substring)	Partial matches (OEO term as substring)
40,905	289	98 (34%)	262	1,303





# Conclusions

- Seamlessly locate datasets that contains information relevant to organic agriculturists research interests.
- Programmatically access as RDF dump, through SPARQL endpoint or other available protocols.
- Find out the license associated with the dataset, making sure that data are accessible under open-access license or certain attribution;
- Understand the content of the dataset in order to perform an alignment with other datasets: Assisting Data identity alignment, schema alignment, data integration.